

Listing of Claims

1. (Currently Amended) A transmission apparatus of a mobile communication terminal comprises:

a modem for outputting an intermediate frequency (IF) signal, and an auto gain control(AGC) signal;

a gain controller for adjusting a gain of the IF signal ~~according to the AGC signal~~;

a power controlling circuit for adjusting the AGC signal according to temperature change of the terminal, and applying the adjusted AGC signal to the gain controller, the power controlling circuit including a first resistor coupled in parallel to a thermistor to form a voltage divider, the voltage divider dividing the AGC signal based on resistance values of the first resistor and the thermistor to generate the adjusted AGC signal; and

a transmission signal processing block for converting the IF signal whose gain is adjusted, into a radio frequency (RF) signal, amplifying and bandwidth filtering the converted RF signal, then amplifying power of the RF signal as much as the RF signal can reach a receiving side, and emitting the amplified RF signal.

2. (Original) The apparatus of claim 1, wherein the transmission signal processing block comprises:

a mixer for converting the signal whose gain is adjusted, into a RF signal;

a drive amplifier for amplifying the RF signal;

a filter for bandwidth filtering the amplified signal; and

a power amplifier for sufficiently amplifying power of the signal as much as the filtered signal can be transmitted to a receiving side through the air.

3. (Original) The apparatus of claim 1, wherein the power controlling circuit is positioned between the modem and the gain controller.

4. (Currently Amended) The apparatus of claim 1, wherein the ~~power controlling circuit comprises:~~ a thermistor has whose one side [[is]] connected with the modem~~[[,]]~~ and whose other another side [[is]] connected with the gain controller~~[[; a]],~~ and wherein the resistor has whose one side [[is]] earthed~~[[,]]~~ and whose other another side [[is]] connected with the thermistor in parallel.

5. (Currently Amended) A transmission ~~[[The]]~~ apparatus of ~~claim 1~~ a mobile communication terminal, comprises comprising:

a modem for outputting an intermediate frequency (IF) signal and an auto gain control(AGC) signal;

a gain controller for adjusting a gain of the IF signal;
a power controlling circuit for adjusting the AGC signal according to temperature change
of the terminal and applying the adjusted AGC signal to the gain controller; and
a transmission signal processing block for converting the IF signal whose gain is adjusted,
into a radio frequency (RF) signal, amplifying and bandwidth filtering the converted RF signal,
then amplifying power of the RF signal as much as the RF signal can reach a receiving side, and
emitting the amplified RF signal, wherein the power controlling circuit comprises:

a first resistor whose one side is connected with the modem;

a second resistor whose one side is connected with the first resistor, and whose other side
is connected with the gain controller; and

a thermistor whose one side is earthed, and whose other side is connected with the first
and second resistors in parallel.

6. (Currently Amended) A transmission ~~[[The]]~~ apparatus of ~~claim 1~~ of a mobile
communication terminal, comprises comprising:

a modem for outputting an intermediate frequency (IF) signal and an auto gain
control(AGC) signal;
a gain controller for adjusting a gain of the IF signal;
a power controlling circuit for adjusting the AGC signal according to temperature change

of the terminal and applying the adjusted AGC signal to the gain controller; and

a transmission signal processing block for converting the IF signal whose gain is adjusted,
into a radio frequency (RF) signal, amplifying and bandwidth filtering the converted RF signal,
then amplifying power of the RF signal as much as the RF signal can reach a receiving side, and
emitting the amplified RF signal, wherein the power controlling circuit comprises:

an AGC adjuster for adjusting the ~~[[an]]~~ AGC signal of the modem according to temperature change of the terminal to generate a first adjusted AGC signal , and applying the first adjusted AGC signal to the gain controller; and

a signal amplifier for amplifying the first adjusted AGC signal applied to the gain controller to form a second adjusted AGC signal, the second adjusted AGC signal amplified at a voltage level according to a predetermined level of performance of the modem as much as the modem can recognize, and transmitting the amplified AGC signal and transmitted to the modem.

7. (Currently Amended) The apparatus of claim 11 ~~[[6]]~~, wherein the ~~AGC adjuster comprises: a thermistor~~ has ~~whose one side~~ ~~[[is]]~~ connected with the modem~~[[,]]~~ and ~~whose other another side~~ ~~[[is]]~~ connected with the gain controller~~[[; a]]~~, and wherein the resistor has ~~whose one side~~ ~~[[is]]~~ earthed~~[[,]]~~ and ~~whose other another side~~ ~~[[is]]~~ connected with the thermistor in parallel.

8. (Original) The apparatus of claim 6, wherein the AGC adjuster comprises:
 - a first resistor whose one side is connected with the modem;
 - a second resistor whose one side is connected with the first resistor, and whose other side is connected with the gain controller; and
 - a thermistor whose one side is earthed, and whose other side is connected with the first and second resistors in parallel.
9. (Original) The apparatus of claim 6, wherein the signal amplifier is implemented using an operational amplifier.
10. (New) The apparatus of claim 5, wherein the first resistor and the thermistor form a voltage divider for dividing the AGC signal based on resistance values of the first resistor and the thermistor, and wherein the second resistor modifies a signal output from the voltage divider to form the adjusted AGC signal.
11. (New) The apparatus of claim 6, wherein the AGC adjuster comprises:
 - a thermistor; and
 - a resistor coupled in parallel to the thermistor to form a voltage divider, wherein the voltage divider divides the AGC signal based on resistance values of the resistor and the thermistor to generate the adjusted AGC signal.

12. (New) The apparatus of claim 8, wherein the first resistor and the thermistor form a voltage divider for dividing the AGC signal based on resistance values of the first resistor and the thermistor, and wherein the second resistor modifies a signal output from the voltage divider to form the adjusted AGC signal.

13. (New) The apparatus of claim 6, wherein the signal amplifier includes:

an operational amplifier having a first terminal coupled to receive the first adjusted AGC signal and a second terminal coupled to receive a reference voltage.

14. (New) The apparatus of claim 13, further comprising:

a control circuit coupled to control a gain of the operational amplifier to amplify the first adjusted AGC signal according to the predetermined level of performance of the modem.

15. (New) The apparatus of claim 13, wherein the control circuit includes:

a capacitor coupled to a gain control input of the operational amplifier through a node coupled to a supply voltage, a capacitance of the capacitor set to correspond to the predetermined level of performance of the modem.

16. (New) The apparatus of claim 11, wherein the signal amplifier includes:
- an operational amplifier having a first terminal coupled to receive the first adjusted AGC signal corresponding to the divided AGC signal generated by the voltage divider and a second terminal coupled to receive a reference voltage.
17. (New) The apparatus of claim 6, wherein the AGC adjuster comprises:
- a thermistor;
 - a first resistor coupled in parallel to the thermistor to form a voltage divider which divides the AGC signal based on resistance values of the resistor and the thermistor; and
 - a second resistor to modify a signal output from the voltage divider to form the first adjusted AGC signal.
18. (New) The apparatus of claim 17, wherein the signal amplifier includes:
- an operational amplifier having a first terminal coupled to receive the first adjusted AGC signal from the second resistor and a second terminal coupled to receive a reference voltage.
19. (New) The apparatus of claim 6, wherein the modem monitors the first adjusted AGC signal and modifies the AGC signal input into the AGC adjuster based on changes in the second adjusted AGC signal.

20. (New) The apparatus of claim 19, wherein the modem monitors the first adjusted AGC signal based on the second adjusted AGC signal fed back from the signal amplifier.

21. (New) The apparatus of claim 6, wherein the modem:

estimates an internal temperature of the mobile communication terminal based on the second adjusted AGC signal;

compares the estimated temperature to a reference temperature; and

generates the AGC signal input into the AGC adjuster based on the comparison.